30 Cents
Suggested Price

RCA picture tube product guide

color and black & white

35 years experience

NO OTHER COMPANY CAN MAKE THIS CLAIM — As far back as 1930 RCA, at the direction of a visionary General David Sarnoff, initiated research in COLOR TV . . . years of engineering effort and investment followed . . . with myriad demonstrations and test colorcasts.

There was something special about the 1954 Tournament of Roses Parade preceding the annual Rose Bowl football game. As usual the college beauty queens adorned the floats, bedecked with dazzling floral arrangements. However, *for the first time in history all the color and reality of the occasion was captured electronically as NBC made the first national network TV colorcast viewed by audiences throughout the nation on the screens of RCA color receivers.* A scant two weeks before, on December 17, 1953, the FCC had approved RCA's compatible color-TV system and standards. Though truly a gratifying day for RCA, and a milestone in television history, it was but a pivotal date in the development of color television.

To come was another full decade of research and development and the gigantic task of mastering the demands of mass production while maintaining the quality reception color TV demanded; and all the while whetting the public's desire for this new dimension in television viewing.

During this pioneering period RCA showed the foresightedness of sharing its knowledge with its competitors, recognizing that the task of introducing color television to the public was one for the entire industry rather than a single manufacturer.

From the mid '50's on, RCA's involvement in color television intensified, its investment increased. Day by day each new development brought closer together the separate but related factors needed to create an industry: increased network color broadcasting spearheaded by NBC . . . breakthroughs in color camera tubes and studio equipment . . . the ever-widening audience exposed to actual color TV programs . . . the sustained healthy economy of the country . . . the preference of national advertisers for color commercials . . . the unrelenting research, production, and promotion of color TV by RCA.

As time turned the corner and headed into the 60's, the picture became clear: COLOR TV was accepted by the American public. In the space of a few years, that public acceptance turned into public demand and the "color boom" as we now know it became a reality.

Consequently, RCA's role has changed from pioneer to bulwark of the color TV industry. Adding to its already huge investment in color TV, mid-1965 saw RCA allocate another $50 million for doubling its color TV receiver and tube production capacity. Thus another giant step was taken, this time to enable RCA to satisfy the demand it was so instrumental in creating and thereby meeting the dual needs of both the original and the replacement picture tube market.

NOTE: See back cover for historical calendar on color TV development.

12-65
Printed in U.S.A.

RCA

Hi-Lite color picture tubes

RCA and your Authorized RCA Picture Tube Distributor now offer you the unprecedented support of Hi-Lite — a complete line of all-new rare-earth phosphor color television picture tubes. These tubes utilize advanced green and blue sulfide phosphors plus a rare-earth red phosphor which are applied by a unique slurry screening process developed by RCA. The result is a line of all-new picture tubes that offer vivid, natural colors and picture brightness unsurpassed in the industry.

To help you quickly identify RCA Hi-Lite Color picture tubes, a new coding system has been adopted. Prefix HR/ in conjunction with the type designation indicates an all-new Hi-Lite color picture tube which incorporates the rare-earth red-emitting phosphor. Prefix CR/ in conjunction with the type designation indicates a rebuilt (Colorama) tube which incorporates the rare-earth red-emitting phosphor. Prefix CS/ in conjunction with the type designation indicates a rebuilt (Colorama) picture tube which has an all-sulfide or one of the earlier types of phosphor screens.

A table of RCA color picture tubes, available from your RCA Distributor, with their new prefixes is given below:

All-New Hi-Lite Types (Rare-Earth Phosphor)	*Future* Rebuilt Rare-Earth Phosphor Types	Other Types
HR/19EYP22	CR/19EYP22	CS/21AXP22A
HR/21FBP22A	CR/21FBP22A	CS/21CYP22A
HR/21FJP22A	CR/21FJP22A	CS/21FBP22
HR/25AP22A	CR/25AP22A	CS/21FJP22
HR/25BP22A	CR/25BP22A	CS/25AP22

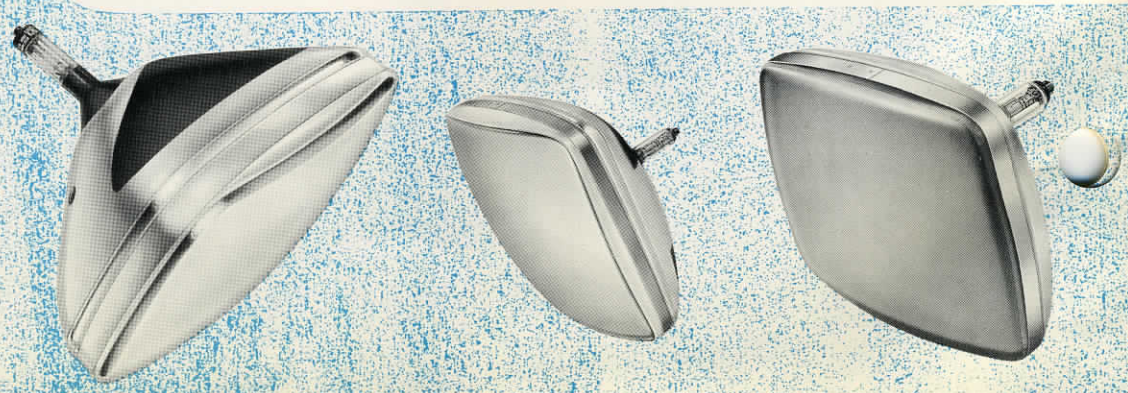
Silverama® Black & White Picture Tubes

RCA Silverama Picture Tube quality is worth talking about. From its precision electron gun and smooth grain-free phosphor screen — to its carefully cleaned, tested and inspected reused envelope; RCA Silverama is the picture tube of unsurpassed quality.

Envelopes are thoroughly inspected to meet the standards of the original new envelopes. Then they are buffed, polished, reinspected and given a series of acid baths. These baths restore each envelope to its peak of optical capability in readiness for its new screen. The RCA Silverama screen smoothness begins with the proper blend and quality of phosphors. RCA develops and produces its own superior blend of phosphors. The phosphor, in a solution of demineralized water, is dispensed into the envelope which travels along a vibration-free belt to allow the phosphor to gently settle and entirely cover the faceplate.

Electron gun mounts are vibrated at ultra-sonic frequencies in a cleansing agent to wash away all small particles including dust which could cause electron gun failure. The electron guns are assembled in an ultra-clean white room which is kept under constant pressure to keep out any airborne dust. After assembly and inspection, the completed guns are stored under air-tight plastic covers prior to final tube assembly.

Inspection takes place all along the production line as well as a final inspection of completed tubes. Tubes are checked for screen quality and focus. They are further examined in 26 separate automatic tests which include warm up, emission, gas, leakages, and electron gun performance. A single failure means automatic rejection. Samples of all Silverama tube types are life tested, some up to 4000 hours.



RCA PICTURE-TUBE CHARACTERISTICS CHART

RCA Type	Heater Volts/mA	Envelope	Aluminized Screen	Faceplate[a]	Minimum Screen Size Inches	Greatest Deflection Angle[b] (Approx.) Degrees	Focusing Method	Approx. Tube Weight Pounds	Maximum Overall Length Inches	Basing	Design Maximum Anode[c] Voltage Volts	PM Ion-Trap Magnet Required
Silverama Types for Black-and-White TV												
5TP4[d]	6.3/600	○G	Yes	CL	4.500 Dia.	50	E	1.2	12.125	12C	29,500	No
7JP4	6.3/600	○G	No	CL	6.000 Dia.	(e)	E	3	14.875	14R	6,500	No
8DP4	6.3/600	□G	No	FG	7.188 x 5.375	90	E	3	10.750	12AB	9,000	Yes
9QP4A	4.7/300	□G	No	FG	7.688 x 6.125	70	E	3.5	13.062	12AD	7,500	Yes
10BP4A	6.3/600	○G	No	FG	9.125 Dia.	50	M	10	18.000	12N	13,000	Yes
10FP4A	6.3/600	○G	Yes	FG	9.125 Dia.	50	M	10	18.000	12N	13,000	No
11CP4	6.3/450	□G	Yes	FG	9.000 x 7.125	110	E	4	9.188	8HR	15,000	No
11HP4A	6.3/450	□G[m]	Yes	FG	9.000 x 7.125	110	E	4	9.188	8HR	15,000	No
12BNP4A	6.3/450	□G[m]	Yes	FG	10.125 x 7.625	110	E	5	9.598	8HR	16,000	No
12KP4A	6.3/600	○G	Yes	FG	11.000 Dia.	54	M	12	18.000	12N	13,000	No
14ATP4	8.4/450	□G	Yes	FG	12.062 x 9.500	90	E	8.5	13.500	12L	15,500	No
14CP4B	6.3/600	□G	Yes	FG	11.500 x 8.625	70	M	10.5	16.875	12N	15,500	No
14WP4	6.3/600	□G	Yes	FG	12.062 x 9.500	90	E	8.5	13.500	12L	15,500	No
16ANP4	6.3/600	□G[q]	Yes	FG	12.938 x 10.250	114	E	9.5	10.750	8HR	18,000	No
16AYP4	6.3/450	□G	Yes	FG	12.938 x 10.250	114	E	8.5	10.561	8HR	20,000	No
16BGP4	6.3/450	□G[m]	Yes	FG	12.938 x 10.250	114	E	9.5	10.811	8HR	20,000	No
16DP4A	6.3/600	○G	No	FG	14.500 Dia.	60	M	15	21.000	12D	16,500	Yes
16GP4B	6.3/600	○M	No	FFG	14.375 Dia.	70	M	11	17.688	12D	15,500	Yes
16LP4A	6.3/600	○G	No	FG	14.500 Dia.	52	M	14.5	22.625	12N	15,500	Yes
16RP4B	6.3/600	□G	Yes	FG	13.500 x 10.125	70	M	16	19.125	12N	17,500	No
16TP4	6.3/600	□G	No	FG	13.500 x 10.125	70	M	16	18.500	12N	15,500	Yes
16WP4A	6.3/600	○G	No	FG	14.500 Dia.	70	M	16.5	18.125	12N	17,500	Yes
17BJP4	6.3/600	□G	Yes	FG	14.312 x 11.125	90	E	15	15.000	12L	17,500	No
17BP4D	6.3/600	□G	Yes	FG	14.312 x 11.125	70	M	18	19.562	12N	17,500	No
17CDP4	8.4/450	□G	Yes	FG	14.750 x 11.688	110	E	10	12.812	8HR	17,500	No
17CFP4	6.3/600	□G	Yes	FG	14.750 x 11.688	90	E	10	15.375	12L	17,500	No
17CP4	6.3/600	□M	No	FFG	14.375 x 10.688	70	M	10	19.000	12D	17,500	Yes
17CSP4	6.3/600	□G	Yes	FG	14.750 x 11.688	110	E	10	12.625	7FA	17,500	No
17CYP4	6.3/600	□G	Yes	FG	14.750 x 11.688	90	E	10	14.375	12L	17,500	No
17DAP4	2.68/450	□G	Yes	FG	14.750 x 11.688	110	E	10	10.875	8JK	17,500	No
17DKP4	6.3/600	□G	Yes	FG	14.750 x 11.688	110	E	10	10.938	8JR	23,000	No
17DQP4[f]	6.3/450	□G	Yes	FG	14.750 x 11.688	110	E	10	12.375	7FA	17,500	No
17DRP4[g]	2.68/450	□G	Yes	FG	14.750 x 11.688	110	E	10	11.000	8JK	17,500	No
17DSP4	6.3/600	□G	Yes	FG	14.750 x 11.688	110	E	10	11.438	8HR	20,000	No
17DXP4	6.3/450	□G	Yes	FG	14.750 x 11.688	110	E	10	10.938	8JR	17,500	No
17EFP4	6.3/450	□G	Yes	FG	14.750 x 11.688	110	E	10	11.438	8HR	20,000	No
17GP4	6.3/600	□M	No	FFG	14.375 x 10.688	70	E	10	19.312	12M	17,500	Yes
17HP4C	6.3/600	□G	Yes	FG	14.312 x 11.125	70	E	18	19.562	12L	17,500	No
17LP4B	6.3/600	□G	Yes	FG[h]	14.250 x 10.750	70	E	19	19.562	12L	17,500	No
17QP4B	6.3/600	□G	Yes	FG[h]	14.250 x 10.750	70	M	19	19.562	12N	20,000	No
17TP4	6.3/600	□M	No	FFG	14.375 x 10.688	70	E	10	19.312	12M	17,500	Yes
19ABP4	2.68/450	□G	Yes	FG	15.125 x 12.000	114	E	14	11.125	8JK	20,000	No
19AHP4	6.3/450	□G	Yes	FG	15.125 x 12.000	114	E	13.5	11.625	8HR	17,500	No
19AJP4[f]	6.3/450	□G	Yes	FG	15.125 x 12.000	114	E	14	11.625	7FA	20,000	No
19AUP4	6.3/600	□G[j]	Yes	FG[k]	15.250 x 12.062	114	E	18.5	11.938	8HR	20,000	No
19AVP4	6.3/600	□G	Yes	FG	15.125 x 12.000	114	E	14	11.625	8HR	23,000	No
19AYP4	6.3/450	□G	Yes	FG	15.125 x 12.000	114	E	14	11.625	8HR	23,000	No

For footnotes see page 7

RCA PICTURE-TUBE CHARACTERISTICS CHART

RCA Type	Heater Volts/mA	Envelope	Aluminized Screen	Faceplate[a]	Minimum Screen Size Inches	Greatest Deflection Angle[b] (Approx.) Degrees	Focusing Method	Approx. Tube Weight Pounds	Maximum Overall Length Inches	Basing	Design Maximum Anode[c] Voltage Volts	PM Ion-Trap Magnet Required
Silverama Types for Black-and-White TV												
19BDP4[f]	6.3/600	□G	Yes	FG	15.125 x 12.000	92	E	15	15.625	12L	20,000	No
19BTP4	6.3/600	□G	Yes	FG	15.125 x 12.000	114	E	14	11.062	8JR	23,000	No
19CHP4[f]	6.3/600	□G	Yes	FG	15.125 x 12.000	114	E	14	11.875	8HR	20,000	No
19CMP4[f]	6.3/450	□G	Yes	FG	15.125 x 12.000	114	E	14	11.875	8HR	20,000	No
19CXP4[f]	6.3/600	□G	Yes	FG	15.125 x 12.000	114	E	14	11.875	7FA	20,000	No
19DAP4	6.3/450	□G[q]	Yes	FG[k]	15.250 x 12.062	114	E	15.5	11.875	8HR	23,000	No
19DQP4	6.3/450	□G[m]	Yes	FG	15.187 x 12.000	114	E	15	11.875	8HR	23,000	No
19DRP4	6.3/600	□G[m]	Yes	FG	15.187 x 12.000	114	E	15	11.875	8HR	23,000	No
19DSP4[f]	6.3/600	□G[m]	Yes	FG	15.187 x 12.000	114	E	15	11.875	8HR	20,000	No
20DP4D	6.3/600	□G	Yes	FG	17.000 x 12.750	70	M	30	22.125	12N	20,000	No
20HP4E	6.3/600	□G	Yes	FG	17.000 x 12.750	70	E	30	22.125	12L	17,500	No
21AMP4B	6.3/600	□G	Yes	FG	19.062 x 15.062	90	M	24	20.375	12N	20,000	No
21AP4	6.3/600	□M	No	FFG	18.125 x 13.688	70	M	18	22.625	12D	20,000	Yes
21AVP4C	6.3/600	□G	Yes	FG	19.062 x 15.062	72	E	24	23.406	12L	22,000	No
21AWP4A	6.3/600	□G	Yes	FG	19.062 x 15.062	72	M	24	23.406	12N	20,000	No
21CBP4A	6.3/600	□G	Yes	FG	19.062 x 15.062	90	E	24	18.375	12L	22,000	No
21CQP4	6.3/600	□G	Yes	FG	19.062 x 15.062	110	E	20	14.812	7FA	20,000	No
21DEP4A	6.3/600	□G	Yes	FG	19.062 x 15.062	110	E	20	15.062	8HR	22,000	No
21DFP4	6.3/600	□G	Yes	FG	19.062 x 15.062	110	E	23	14.750	8HR	20,000	No
21DHP4	6.3/450	□G	Yes	FG	19.062 x 15.062	110	E	20	15.000	8HR	20,000	No
21DLP4	6.3/600	□G	Yes	FG	19.062 x 15.062	90	E	24	17.375	12L	22,000	No
21DSP4[f]	6.3/600	□G	Yes	FG	19.062 x 15.062	90	E	24	18.375	12L	22,000	No
21EP4C	6.3/600	□G	Yes	FG[h]	19.125 x 13.875	70	M	29	23.406	12N	20,000	No
21EQP4	6.3/600	□G	Yes	FG	19.062 x 15.062	110	E	23	12.875	8JR	20,000	No
21EVP4[g]	2.68/450	□G	Yes	FG	19.062 x 15.062	110	E	20	13.188	8JK	20,000	No
21FAP4	6.3/600	□G	Yes	FG	19.062 x 15.062	110	E	20	13.125	8JR	22,000	No
21FDP4	6.3/600	□G	Yes	FG	19.062 x 15.062	110	E	20	13.375	8KW	20,000	No
21FP4D	6.3/600	□G	Yes	FG[h]	19.125 x 13.875	70	E	29	23.406	12L	20,000	No
21FVP4	6.3/450	□G[m]	Yes	FG	16.875 x 13.250	114	E	19	12.937	8HR	23,000	No
21MP4	6.3/600	□M	No	FFG	18.125 x 13.688	70	E	18	22.625	12M	17,500	Yes
21WP4B	6.3/600	□G	Yes	FG	17.375 x 13.625	70	M	24	22.812	12N	20,000	No
21XP4B	6.3/600	□G	Yes	FG	17.375 x 13.625	70	E	24	22.812	12L	20,000	No
21YP4B	6.3/600	□G	Yes	FG	19.062 x 14.188	70	E	24	23.406	12L	20,000	No
21ZP4C	6.3/600	□G	Yes	FG	19.062 x 14.188	70	M	24	23.406	12N	20,000	No
23AHP4	6.3/600	□G	Yes	FG	19.250 x 15.125	92	E	25	18.375	12L	22,000	No
23ARP4	6.3/600	□G	Yes	FG	19.312 x 15.250	110	E	25	15.156	8HR	22,000	No
23ASP4	6.3/600	□G	Yes	FG	19.250 x 15.125	92	E	25	17.375	12L	22,000	No
23BGP4[f]	6.3/600	□G[j]	Yes	FG	19.312 x 15.250	110	E	33	15.562	8HR	22,000	No
23BJP4[f]	6.3/600	□G	Yes	FG	19.250 x 15.125	92	E	25	18.500	12L	25,000	No
23BLP4[f]	6.3/600	□G[j]	Yes	FG[k]	19.312 x 15.250	92	E	35	18.875	12L	25,000	No
23BQP4	6.3/450	□G[j]	Yes	FG	19.312 x 15.250	110	E	33	15.562	8HR	23,000	No
23CBP4	6.3/450	□G[j]	Yes	FG[k]	19.312 x 15.250	110	E	33	15.562	8HR	23,000	No
23CGP4	6.3/450	□G	Yes	FG	19.250 x 15.125	92	E	25	18.375	12L	22,000	No
23CP4	6.3/600	□G[j]	Yes	FG	19.312 x 15.250	110	E	33	15.562	8HR	22,000	No
23CQP4	6.3/450	□G	Yes	FG	19.250 x 15.125	114	E	24	14.062	8HR	23,500	No
23DAP4[f]	6.3/600	□G	Yes	FG	19.250 x 15.125	94	E	27	17.391	8HR	23,000	No
23DBP4[f]	6.3/600	□G	Yes	FG	19.312 x 15.250	110	E	25	15.156	8HR	22,000	No

For footnotes see page 7

RCA PICTURE-TUBE CHARACTERISTICS CHART

RCA Type	Heater Volts/mA	Envelope	Aluminized Screen	Faceplate[a]	Minimum Screen Size Inches	Greatest Deflection Angle[b] (Approx.) Degrees	Focusing Method	Approx. Tube Weight Pounds	Maximum Overall Length Inches	Basing	Design Maximum Anode[c] Voltage Volts	PM Ion-Trap Magnet Required
Silverama Types for Black-and-White TV												
23EKP4	6.3/450	□G[m]	Yes	FG	19.250 x 15.125	92	E	29	18.375	12L	25,000	No
23ENP4[f]	6.3/600	□G[m]	Yes	FG	19.250 x 15.125	92	E	29	18.500	12L	25,000	No
23EP4[f]	6.3/600	□G[j]	Yes	FG	19.312 x 15.250	110	E	33	15.562	8KP	22,000	No
23EQP4	6.3/450	□G[m]	Yes	FG	19.250 x 15.125	114	E	25	14.812	8HR	23,000	No
23ETP4	6.3/600	□G[m]	Yes	FG	19.250 x 15.125	110	E	25	15.156	8HR	23,000	No
23FBP4[f]	6.3/600	□G[m]	Yes	FG[k]	19.250 x 15.125	92	E	29	18.500	12L	25,000	No
23FMP4	6.3/450	□G[m]	Yes	FG	19.250 x 15.125	110	E	25	15.156	8HR	23,000	No
23FP4A	6.3/600	□G	Yes	FG	19.250 x 15.125	114	E	24	14.062	8HR	23,500	No
23JP4[f]	6.3/450	□G[j]	Yes	FG	19.312 x 15.250	110	E	33	15.875	7FA	22,000	No
23NP4[f]	6.3/600	□G	Yes	FG	19.250 x 15.125	114	E	24	14.812	8HR	22,000	No
23YP4	6.3/600	□G[j]	Yes	FG	19.312 x 15.250	92	E	35	18.750	12L	22,000	No
24AEP4	6.3/600	□G	Yes	FG	21.438 x 16.875	90	E	32.5	19.500	12L	22,000	No
24AHP4	6.3/600	□G	Yes	FG	21.438 x 16.875	110	E	26.5	16.188	8HR	22,000	No
24ATP4[f]	6.3/600	□G	Yes	FG	21.438 x 16.875	90	E	32.5	19.500	12L	22,000	No
24AUP4	6.3/600	□G	Yes	FG	21.438 x 16.875	90	E	32.5	18.500	12L	22,000	No
24BAP4[f]	6.3/600	□G	Yes	FG	21.438 x 16.875	110	E	26.5	16.188	8HR	22,000	No
24BEP4	6.3/600	□G	Yes	FG	21.438 x 16.875	110	E	26.5	15.125	8KW	20,000	No
24CP4B	6.3/600	□G	Yes	FG	21.438 x 16.875	90	M	32.5	21.500	12N	22,000	No
27MP4	6.3/600	□M	Yes	FFG	23.438 x 18.125	90	M	30	22.188	12D	20,000	Yes
27RP4A	6.3/600	□G	Yes	FG	24.250 x 18.625	90	M	44	23.438	12N	22,000	No
Color Picture Tubes												
15GP22[n]	6.3/1800[p]	○G	Yes	CL	11.500 x 8.625	45	E	25	26.125	20A	22,000	No
19EYP22[t]	6.3/800[s]	□G[q]	Yes	FG[k]	15.585 x 12.185	90	E	24	18.423	14BE	27,500	No
21AXP22A	6.3/1800[p]	○M	Yes	FG	19.062 x 15.250	70	E	28	25.312	14AH	27,500	No
21CYP22A	6.3/1800[p]	○G	Yes	FG	19.250 x 15.500	70	E	36.5	25.406	14AL	27,500	No
21FBP22	6.3/1800[p]	○G	Yes	FG	19.250 x 16.000	70	E	36.5	25.406	14AU	27,500	No
21FBP22A[t]	6.3/1800[p]	○G	Yes	FG	19.250 x 16.000	70	E	36.5	25.406	14AU	27,500	No
21FJP22	6.3/1800[p]	○G[q]	Yes	FG[k]	19.250 x 16.000	70	E	41	25.594	14AU	27,500	No
21FJP22A[t]	6.3/1800[p]	○G[q]	Yes	FG[k]	19.250 x 16.000	70	E	41	25.594	14AU	27,500	No
25AP22A[t]	6.3/800[s]	□G[q]	Yes	FG[k]	19.875 x 15.575	90	E	42	21.299	14BE	27,500	No
25BP22A[t]	6.3/800[s]	□G	Yes	FG	19.875 x 15.575	90	E	37	21.107	14BE	27,500	No
Test Picture Tubes												
5AXP4	6.3/600	○G	No	CL	4.250 Dia.	53	E[r]	1.5	11.000	12S	20,000	No
8XP4	6.3/600	□G	Yes	FG	7.188 x 5.375	90	E[r]	3	11.750	12S	22,000	No
8YP4	6.3/600	□G	Yes	FG	7.500 x 5.875	110	E[r]	2	9.000	7FG	22,000	No
1828P22	6.3/1800[p]	○G	Yes	FG	19.250 x 16.000	70	E	36.5	25.406	14AU	27,500	No

FOOTNOTES

○G Glass round. ○M Metal round.

□G Glass rectangular. □M Metal rectangular.

CL Clear Glass. E Electrostatic. FG Filterglass.

FFG Frosted Filterglass. M Magnetic.

[a] Faceplate is spherical, unless otherwise specified.

[b] All types utilize magnetic deflection except type 7JP4 which employs electrostatic deflection.

[c] The anode defined as the electrode, or the electrode in combination with one or more additional electrodes connected within the tube to it, to which is applied the highest dc voltage for accelerating the electrons in the beam prior to its deflection.

[d] Projection type.

[e] Typical deflection factors (volts dc/in.) for anode voltage of 6000 volts:
DJ1 & DJ2 (nearer screen) 186 to 246
DJ3 & DJ4 (nearer base) 150 to 204

[f] Has low grid-No. 2 voltage rating: for Cathode-Drive Service.

[g] This type has an internal magnetic shield.

[h] Cylindrical faceplate.

[j] Bipanel type.

[k] Treated to reduce specular reflection.

[m] PAN-O-PLY — integral implosion protection.

[n] This type has a flat, aluminized, filterglass phosphor-dot screen plate.

[p] Three heaters paralleled internally.

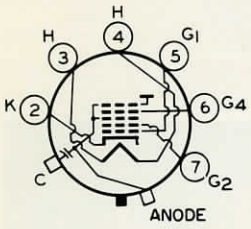
[q] This type has an integral protective window.

[r] Automatic.

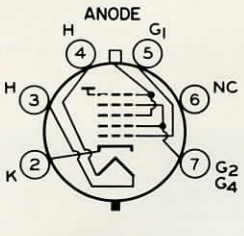
[s] Three heaters series connected internally.

[t] Hi-Lite Screen — Rare-Earth Phosphor.

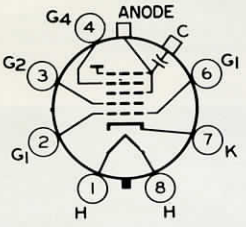
TERMINAL DIAGRAMS for RCA PICTURE TUBES



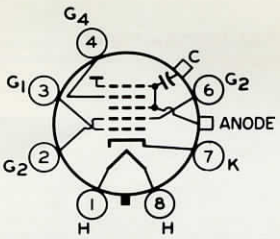
7FA
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



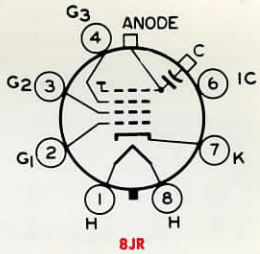
7FG
ANODE = $G_3 + G_5 + CL$
AUTOMATIC FOCUSING



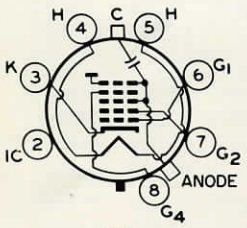
8HR
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



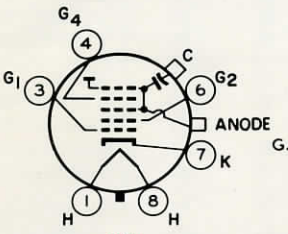
8JK
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



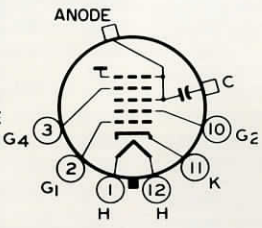
8JR
ANODE = $G_4 + CL$
FOCUSING ELECTRODE = G_3



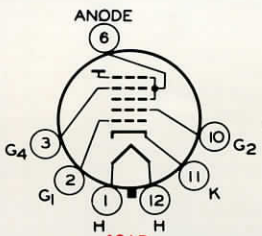
8KP
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



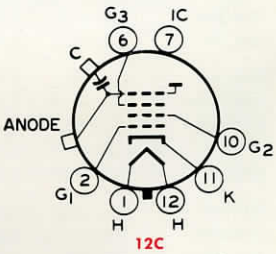
8KW
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



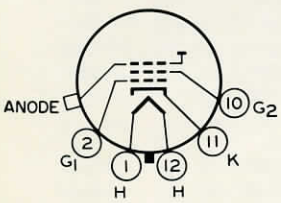
12AB
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



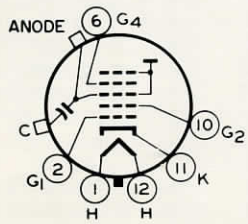
12AD
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



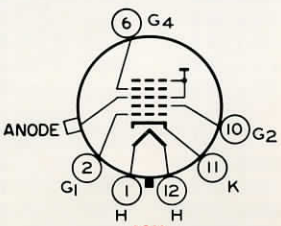
12C
ANODE = $G_4 + CL$
FOCUSING ELECTRODE = G_3



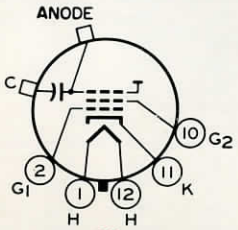
12D
ANODE = $G_3 + CL$



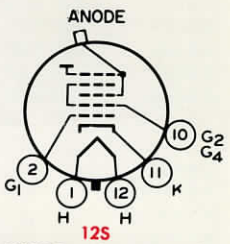
12L
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



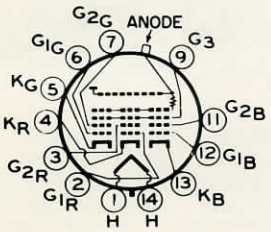
12M
ANODE = $G_3 + G_5 + CL$
FOCUSING ELECTRODE = G_4



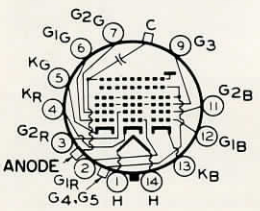
12N
ANODE = $G_3 + CL$



12S
ANODE = $G_3 + G_5 + CL$
AUTOMATIC FOCUSING

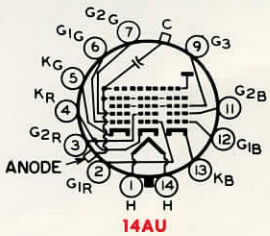


14AH
ANODE = $G_4 + G_5 + CL + R$
FOCUSING ELECTRODE = G_3

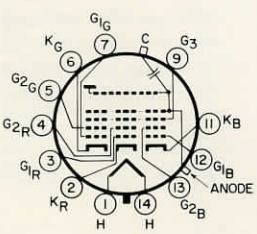


14AL

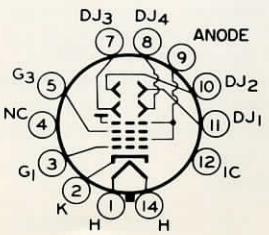
(14AL)
CAP OVER PIN No. 1 = $G_4 + G_5$
CAP OVER PIN No. 2 = ANODE = G_6 + CL & HIGH-VOLTAGE TERMINAL. Connect High-Voltage Supply to this Cap and also connect 50,000-ohm resistor between this Cap and the Cap over Pin No. 1.
FOCUSING ELECTRODE = G_3



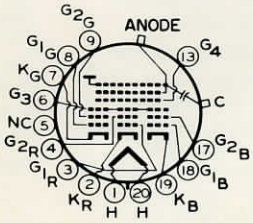
14AU
ANODE = $G_4 + G_5 + CL$
FOCUSING ELECTRODE = G_3



14BE
ANODE = $G_4 + G_5 + CL$
FOCUSING ELECTRODE = G_3



14R
ANODE = $G_2 + G_4 + CL$
FOCUSING ELECTRODE = G_3



20A
ANODE = $G_5 + G_6 + CL$
FOCUSING ELECTRODE = G_3

INDUSTRY REPLACEMENT AND INTERCHANGEABILITY

WITH ONLY 124 TYPES OF RCA UNIVERSAL REPLACEMENT PICTURE TUBES, THE SERVICEMAN CAN REPLACE 477 DIFFERENT INDUSTRY PICTURE TUBE TYPES. THESE CHARTS LIST THE RCA DIRECT REPLACEMENT TYPE OR THE RCA SIMILAR TYPE WHEN ONE OR THE OTHER IS AVAILABLE.

IMPORTANT INSTRUCTIONS
READ CAREFULLY

1. Replacement information supplied in this chart is based primarily on electrical and mechanical similarity of the picture-tube types covered. The serviceman should make certain that replacement is in accord with all safety precautions required by the TV receiver for picture-tube insulation or mechanical mounting.
2. In the case of an RCA similar type, its basing arrangement is the same as that of the type to be replaced, but its listed differences must be considered in using it as a replacement.
3. When a glass picture tube has an external conductive coating, this coating, in combination with the internal conductive coating, provides a capacitor for use in filtering the high voltage power supply. When installing a replacement picture tube having an external conductive coating, provision should be made to ground the coating. Connection to the coating may be made by using a soft brush-type contact, preferably attached to the deflecting-yoke support. A contact area of at least ¼ square inch is required.

Notice: All materials and parts used in the manufacture of RCA Silverama Picture Tubes are new except for the envelope which, prior to re-use, was carefully inspected to meet the standards of the original new envelope.

RCA Colorama Picture Tubes contain used materials which, prior to re-use, are carefully inspected to meet RCA's high quality standards.

REPLACEMENT CLASSIFICATION KEYS

☐ Replacement information is based primarily on electrical and mechanical similarity of the picture-tube types covered. The technician should make certain that replacement is in accord with all safety precautions required by the TV receiver for picture-tube insulation or mechanical mounting.

A. RCA type does not require an external ion-trap magnet.

B. The ball-type anode contact must be replaced with cavity-type contact.

C. Neck length and/or overall length of RCA type is slightly greater.

D. External conductive coating must be grounded.

E. The 16LP4A is electrically interchangeable—Extensive mechanical modifications may be required.

F. The RCA replacement type has a 6.3-volt/600-milliampere heater. The type to be replaced has a 2.35-volt/600-milliampere heater.

G. A conversion Kit (RCA Part No. 12B202) is available for RCA receivers.

*Band around periphery of tube panel must be grounded and isolated from the AC line voltage.

Type to be Replaced	Replace by RCA Type	Replacement Information ☐
5TP4	5TP4	Direct
7JP4	7JP4	Direct
8DP4	8DP4	Direct
9QP4A	9QP4A	Direct
10BP4 10BP4A	10BP4A	Direct
10BP4C 10BP4D	10FP4A	A
10CP4	10FP4A	BCD
10EP4	10BP4A	B
10FP4 10FP4A	10FP4A	Direct
11AP4 11BP4	11HP4A	Direct*
11CP4	11CP4	Direct
11HP4 11HP4A	11HP4A	Direct*
12BNP4 12BNP4A	12BNP4A	Direct*
12JP4	12KP4A	BCD
12KP4 12KP4/12ZP4 12KP4A	12KP4A	Direct
12LP4 12LP4A	12KP4A	A
12LP4C	12KP4A	AD
12QP4 12QP4A	12KP4A	ABCD
12TP4	12KP4A	AD
12ZP4 12ZP4A	12KP4A	A
14ATP4	14ATP4	Direct
14BP4 14BP4A 14CP4 14CP4A	14CP4B	A
14CP4B	14CP4B	Direct
14DP4	14CP4B	AD
14EP4 14EP4/14CP4 14EP4/14CP4/14BP4	14CP4B	A
14NP4 14NP4A	14WP4	A
14RP4 14RP4A 14SP4	14WP4	A
14WP4 14WP4/14ZP4 14ZP4 14ZP4/14WP4	14WP4	Direct
16ANP4	16ANP4	Direct
16AP4 16AP4A	See Note E	
16AYP4	16AYP4	Direct
16BGP4 16BWP4 16CAP4	16BGP4	Direct*
16CP4	16LP4A	CD
16DP4 16DP4A	16DP4A	Direct
16GP4 16GP4A 16GP4B 16GP4C	16GP4B	Direct
16KP4 16KP4A	16RP4B	A
16LP4 16LP4A	16LP4A	Direct
16QP4	16RP4B	AD
16RP4 16RP4/16KP4 16RP4A 16RP4A/16KP4A	16RP4B	A
16RP4B	16RP4B	Direct
16SP4 16SP4A	16WP4A	CD
16TP4	16TP4	Direct
16UP4	16RP4B	ACD
16VP4	16WP4A	CD
16WP4 16WP4/16YP4	16WP4A	D
16WP4A 16WP4B	16WP4A	Direct
16XP4	16RP4B	AD
16YP4	16WP4A	CD
16ZP4	16LP4A	D
17AP4	17BP4D	ACD
17ATP4 17ATP4/17AVP4 17ATP4A 17ATP4A/17AVP4A 17AVP4 17AVP4/17ATP4 17AVP4A 17AVP4A/17ATP4A	17BJP4	A
17BJP4	17BJP4	Direct
17BP4	17BP4D	AD
17BP4A 17BP4B 17BP4C	17BP4D	A
17BP4D	17BP4D	Direct
17BRP4	17DSP4	A
17BUP4	17BJP4	A
17BVP4	17CSP4	A
17BWP4	17CSP4	Direct
17BZP4 17BZP4/17CAP4/ 17CKP4 17BZP4/17CAP4/ 17CKP4/17BRP4 17CAP4	17DSP4	Direct
17CBP4	17BJP4	A
17CDP4	17CDP4	Direct
17CFP4	17CFP4	Direct
17CKP4	17DSP4	Direct
17CLP4	17BJP4	AD
17CP4 17CP4A	17CP4	Direct
17CSP4	17CSP4	Direct
17CWP4	17DSP4	Direct
17CYP4	17CYP4	Direct
17DAP4	17DAP4	Direct
17DHP4	17EFP4	D
17DKP4	17DKP4	Direct
17DLP4	17DSP4	Direct
17DQP4	17DQP4	Direct
17DRP4	17DRP4	Direct
17DSP4	17DSP4	Direct
17DTP4	17DKP4	Direct
17DXP4 17DZP4	17DXP4	Direct
17EBP4	17EFP4	D
17EFP4	17EFP4	Direct
17GP4	17GP4	Direct
17HP4 17HP4/17RP4 17HP4A 17HP4B 17HP4B/17RP4C	17HP4C	A
17HP4C	17HP4C	Direct
17JP4	17BP4D	A

INDUSTRY REPLACEMENT AND INTERCHANGEABILITY

Type to be Replaced	Replace by RCA Type	Replacement Information ☐
17PL4 17LP4/17VP4 17LP4A 17LP4A/17VP4B	17LP4B	A
17LP4B	17LP4B	Direct
17QP4 17QP4A	17QP4B	A
17QP4B	17QP4B	Direct
17RP4 17RP4C	17HP4C	A
17TP4	17TP4	Direct
17UP4	17QP4B	A
17VP4 17VP4/17LP4 17VP4B	17LP4B	A
17YP4	17QP4B	A
19ABP4	19ABP4	Direct
19ACP4	19CHP4	Direct
19AFP4	19AUP4	Direct
19AHP4	19AHP4	Direct
19AJP4	19AJP4	Direct
19AUP4	19AUP4	Direct
19AVP4	19AVP4	Direct
19AXP4 19AYP4	19AYP4	Direct
19BDP4	19BDP4	Direct
19BHP4	19AVP4	Direct
19BLP4	19AVP4	C
19BTP4	19BTP4	Direct
19BVP4	19AVP4	Direct
19BWP4	19AYP4	Direct
19CDP4	19CXP4	Direct
19CFP4	19CHP4	C
19CHP4	19CHP4	Direct
19CJP4	19AVP4	Direct
19CKP4	19CHP4	Direct
19CMP4 19CMP4A	19CMP4	Direct
19CQP4	19CXP4	Direct
19CRP4	19BDP4	Direct
19CXP4	19CXP4	Direct
19CYP4	19BTP4	Direct
19CZP4 19DAP4	19DAP4	Direct
19DCP4	19DRP4	Direct*
19DEP4	19AUP4	Direct
19DFP4	19CHP4	Direct
19DHP4	19DSP4	Direct*
19DLP4	19CHP4	Direct
19DQP4	19DQP4	Direct*
19DRP4	19DRP4	Direct*
19DSP4	19DSP4	Direct*
19DWP4	19DQP4	Direct*
19EDP4	19DRP4	Direct*
19EFP4	19DSP4	Direct*
19EHP4 19EHP4A	19DRP4	Direct*
19ELP4	19AVP4	Direct
19ERP4	19DRP4	Direct*
19ESP4	19DSP4	Direct*
19EUP4	19DRP4	Direct*
19EVP4 19EWP4 19FDP4 19FJP4 19FJP4A	19DQP4	Direct*
19XP4	19AVP4	Direct
19YP4	19BTP4	Direct
19ZP4	19AVP4	Direct
20CP4	20DP4D	ACD
20CP4A	20DP4D	AC
20CP4B 20CP4C	20DP4D	ACD
20CP4D	20DP4D	AC
20DP4	20DP4D	AD
20DP4A 20DP4A/20CP4A	20DP4D	A
20DP4B	20DP4D	AD
20DP4C 20DP4C/20CP4D	20DP4D	A
20DP4D	20DP4D	Direct
20HP4	20HP4E	AD
20HP4A 20HP4A/20LP4 20HP4A/20MP4	20HP4E	A
20HP4B 20HP4C	20HP4E	AD
20HP4D	20HP4E	A
20HP4E	20HP4E	Direct
20LP4 20MP4	20HP4E	A
21ACP4 21ACP4/21AMP4 21ACP4A 21ACP4A/21AMP4A 21ACP4A/21BSP4 21ACP4A/21BSP4/ 21AMP4A	21AMP4B	A
21AFP4	21YP4B	AD
21ALP4 21ALP4A 21ALP4B 21ALP4B/21ALP4A	21CBP4A	AD
21AMP4 21AMP4A	21AMP4B	A
21AMP4B	21AMP4B	Direct
21ANP4 21ANP4A	21CBP4A	AD
21AP4	21AP4 21ZP4C	Direct G
21AQP4 21AQP4A	21AMP4B	AD
21ASP4	21XP4B	AD
21ATP4 21ATP4A 21ATP4A/21ATP4 21ATP4B	21CBP4A	AD
21AUP4 21AUP4A 21AUP4B 21AUP4B/21AUP4A	21AVP4C	A
21AUP4C	21AVP4C	Direct
21AVP4 21AVP4/21AUP4 21AVP4A 21AVP4B 21AVP4B/21AVP4A 21AVP4B/21AUP4B/ 21AVP4A/21AUP4A	21AVP4C	A
21AVP4C	21AVP4C	Direct
21AWP4	21AWP4A	A
21AWP4A	21AWP4A	Direct
21AYP4	21XP4B	A
21BAP4	21CBP4A	Direct
21BCP4	21YP4B	AC
21BDP4	21AVP4C	Direct
21BNP4	21CBP4A	Direct
21BSP4	21AMP4B	A
21BTP4	21CBP4A	A
21CBP4 21CBP4A 21CBP4A/21CBP4/ 21CMP4 21CBP4B	21CBP4A	Direct
21CEP4	21DFP4	Direct
21CEP4A	21DFP4	Direct
21CMP4	21CBP4A	A
21CQP4	21CQP4	Direct
21CUP4	21AMP4B	A
21CVP4	21CBP4A	Direct
21CWP4	21CBP4A	A
21CXP4	21DSP4	Direct
21CZP4	21DEP4A	A
21DAP4 21DEP4 21DEP4A 21DEP4A/21DEP4/ 21CZP4	21DEP4A	Direct
21DFP4	21DFP4	Direct
21DHP4	21DHP4	Direct
21DLP4	21DLP4	Direct
21DMP4	21FAP4	Direct
21DNP4	21CBP4A	AD
21DQP4	21DLP4	Direct
21DSP4	21DSP4	Direct
21EAP4	21FDP4	F
21EMP4	21EQP4	Direct
21EP4	21EP4C	AD
21EP4A 21EP4B	21EP4C	A
21EP4C	21EP4C	Direct
21EQP4	21EQP4	Direct
21ESP4	21FAP4	Direct
21EVP4	21EVP4	Direct
21FAP4	21FAP4	Direct
21FDP4	21FDP4	Direct
21FLP4	21CBP4A	Direct

INDUSTRY REPLACEMENT AND INTERCHANGEABILITY

Type to be Replaced	Replace by RCA Type	Replacement Information ☐
21FP4	21FP4D	AD
21FP4A 21FP4C	21FP4D	A
21FP4D	21FP4D	Direct
21FVP4 21FWP4 21FZP4	21FVP4	Direct*
21MP4	21MP4	Direct
21WP4 21WP4A	21WP4B	A
21WP4B	21WP4B	Direct
21XP4 21XP4A	21XP4B	A
21XP4B	21XP4B	Direct
21YP4 21YP4A	21YP4B	A
21YP4B	21YP4B	Direct
21ZP4	21ZP4C	AD
21ZP4A 21ZP4B	21ZP4C	A
21ZP4C	21ZP4C	Direct
23AFP4	23YP4	Direct
23AHP4	23AHP4	Direct
23ALP4	23CQP4	Direct
23ANP4	23BLP4	Direct
23ARP4	23ARP4	Direct
23ASP4	23ASP4	Direct
23ATP4	23BLP4	Direct
23AUP4	23AHP4	Direct
23AVP4	23CP4	C
23AWP4	23BJP4	C
23BDP4	23YP4	Direct
23BGP4 23BHP4	23BGP4	Direct
23BJP4	23BJP4	Direct
23BKP4 23BLP4	23BLP4	Direct
23BNP4	23CP4	Direct
23BQP4	23BQP4	Direct
23BTP4 23BVP4	23YP4	Direct
23CBP4	23CBP4	Direct
23CGP4	23CGP4	Direct
23CP4 23CP4A	23CP4	Direct
23CQP4	23CQP4	Direct
23CZP4	23AHP4	Direct
23DAP4	23DAP4	Direct
23DBP4	23DBP4	Direct
23DLP4 23DLP4A	23ENP4	C *
23DNP4	23BLP4	Direct
23DYP4	23ETP4	D*
23DZP4	23EQP4	Direct*
23EKP4	23EKP4	Direct*
23ENP4	23ENP4	Direct
23EP4	23EP4	Direct
23EQP4	23EQP4	Direct*
23ETP4	23ETP4	Direct*
23EWP4 23EWP4A	23EQP4	Direct*
23FBP4	23FBP4	Direct *
23FEP4	23ENP4	Direct*
23FJP4	23ETP4	D*
23FLP4	23EKP4	Direct*
23FMP4	23FMP4	Direct*
23FP4 23FP4A	23FP4A	Direct
23GBP4	23FMP4	Direct*
23GEP4	23FBP4	Direct*
23GP4	23CP4	Direct
23GTP4	23ETP4	Direct*
23HP4	23CP4	Direct
23JP4	23JP4	Direct
23KP4 23KP4A	23FP4A	C
23MP4 23MP4/23MP4A/ 23WP4 23MP4A	23FP4A	Direct
23NP4	23NP4	Direct
23TP4	23YP4	Direct
23UP4	23BQP4	Direct
23WP4	23FP4A	Direct
23XP4 23YP4	23YP4	Direct
24ADP4 24ADP4/24VP4A/ 24CP4A/24TP4	24CP4B	A
24AEP4	24AEP4	Direct
24AHP4	24AHP4	Direct
24AJP4	24ATP4	D
24ALP4	24AHP4	Direct
24ANP4	24AEP4	A
24ATP4	24ATP4	Direct
24AUP4	24AUP4	Direct
24AVP4	24BEP4	F
24BAP4	24BAP4	Direct
24BEP4	24BEP4	Direct
24CP4 24CP4A	24CP4B	A
24CP4B	24CP4B	Direct
24DP4 24DP4A 24DP4A/24YP4	24AEP4	A
24QP4	24CP4B	AD
24TP4 24VP4 24VP4A	24CP4B	A
24XP4	24CP4B	AD
24YP4	24AEP4	A
24ZP4	24AEP4	Direct
27EP4	27RP4A	AD
27GP4	27RP4A	AD
27MP4	27MP4	Direct
27NP4 27RP4	27RP4A	A
27RP4A	27RP4A	Direct
SG10FP4A	10FP4A	Direct
SG12KP4A	12KP4A	Direct
SG14CP4A	14CP4B	Direct
SG14WP4	14WP4	Direct
SG16KP4A	16RP4B	Direct
SG17BJP4	17BJP4	Direct
SG17BP4B	17BP4D	Direct
SG17BWP4	17CSP4	Direct
SG17CKP4	17DSP4	Direct
SG17HP4B	17HP4C	Direct
SG17LP4A	17LP4B	Direct
SG17QP4A	17QP4B	Direct
SG20CP4D	20DP4D	C
SG20HP4D	20HP4E	Direct
SG21ACP4A	21AMP4B	Direct
SG21AUP4B	21AVP4C	Direct
SG21AWP4	21AWP4A	Direct
SG21DEP4A	21DEP4A	Direct
SG21EP4B	21EP4C	Direct
SG21FLP4	21CBP4A	Direct
SG21FP4C	21FP4D	Direct
SG21WP4A	21WP4B	Direct
SG21XP4A	21XP4B	Direct
SG21YP4A	21YP4B	Direct
SG21ZP4B	21ZP4C	Direct
SG24AEP4	24AEP4	Direct
SG24CP4A	24CP4B	Direct
SG27RP4	27RP4A	Direct

COLOR PICTURE TUBES

15GP22	15GP22	Direct
19EYP22 19FMP22	19EYP22	Direct
21AXP22 21AXP22A 21AXP22A/21AXP22	21AXP22A	Direct
21CYP22 21CYP22A	21CYP22A	Direct
21FBP22	21FBP22	Direct
21FBP22A	21FBP22A	Direct
21FJP22	21FJP22	Direct
21FJP22A	21FJP22A	Direct
21FKP22	21FJP22	Direct
25AP22 25AP22A	25AP22A	Direct
25BP22 25BP22A	25BP22A	Direct
25CP22	25AP22A	Direct
25FP22 25FP22A	25BP22A	Direct
25GP22 25GP22A	25AP22A	Direct

Capsule Chronology of RCA Leadership in Color-TV

1930 — RCA initiates its research in Color TV, examining the problems of transmitting and receiving acceptable color.

1940 — First to demonstrate electronic and optical Color TV receivers before the Federal Communications Commission.

1941 — RCA scientists and NBC engineers achieve first successful colorcast with experimental transmission from the Empire State Building in New York City.

1946 — Public demonstration of an all-electronic projection-type color TV receiver with a 15 x 20-inch screen.

1947 — RCA publicly demonstrates an all-electronic color-TV camera.

1950 (April 6) — RCA demonstrates three-gun direct view Color TV picture tube and a compatible color TV system to the FCC.

1952 — NBC conducts compatible color TV tests during regular broadcasting hours.

1953 (June 25) — RCA and NBC petition the FCC to adopt the compatible technical signal specifications used by the RCA color TV system as standards for commercial color TV.

1953 (Oct. 15) — RCA and NBC joined with other members of the industry in a final demonstration held by the NTSC at the request of the FCC. This provided overwhelming evidence that all-electronic compatible color television, pioneered and developed by RCA, was ready for the American people.

1953 (Dec. 17) — FCC adopts all-electronic compatible color TV standards recommended by RCA and NBC and NTSC.

1954 (Jan. 1) — NBC makes first national network colorcast. The Tournament of Roses Parade in Pasadena, California, is viewed by audiences throughout the nation on the screens of RCA color receivers.

1954 (March 17) — RCA's Bloomington, Indiana, plant starts a limited commercial production of a color TV receiver.

1955 (Dec.) — RCA offers first complete line of Color TV receivers. NBC reports a total of 215 hours of colorcasts for 1955.

1960 (May 6) — RCA introduces RCA 4401 color camera tube which requires no greater lighting than a black-and-white camera.

1960 (Dec. 15) — RCA introduces all-sulfide color picture tube that produces color pictures up to 50 per cent brighter.

1961 (Aug. 4) — RCA introduces bonded color picture tube with safety-plate glass bonded to face of tube to cut down reflections from light sources in front of receiver. RCA color sets using bonded picture tubes were introduced immediately.

1962 (Feb. 7) — RCA reports the color TV industry has reached an annual going rate of $200 million and that consumer demand for color TV receivers has exceeded supply since November. All the other 11 manufacturers marketing color TV sets use the RCA 21-inch picture tube.

1962 (April 1) — RCA publicly demonstrates an experimental color TV camera which for the first time produces four signals, three in color and one in black-and-white.

1962 (April) — RCA samples 90° round color picture tubes.

1963 — Beginning of rapid growth in color TV sales.

1964 (Sept. 24) — RCA announces the industry's first 25″ 90° rectangular color picture tubes.

1964 (Oct. 22) — RCA announces the industry's first 19″ 90° rectangular color picture tubes.

1965 (March 24) — RCA announces Hi-Lite color picture tubes featuring a phosphor-dot screen utilizing a rare-earth red phosphor and improved blue and green phosphors.

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Electronic Components and Devices
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PIX-300